

ABSTRACT OF THE DISCLOSURE

Disclosed is an optical system for directing light from a light source to a predetermined plane, and it includes an optical
5 element, a measuring mechanism for performing position measurement to a surface of the optical element, at plural measurement points on that surface, a first temperature controlling mechanism for controlling temperature of a first control
10 region of the optical element, a second temperature controlling mechanism for controlling temperature of a second control region of the optical element, and a temperature controller for controlling the first and second temperature
15 controlling mechanisms on the basis of the measurement made by the measuring mechanism. The proposed structure is very effective to prevent thermal deformation of the optical element due to irradiation with light, particularly in a case
20 where only a portion of the optical element is locally irradiated with light.